forces concerned in the maintenance of protein structure and on which the nature and mechanism of enzyme action are dependent. Following this, the ways in which the primary structure of enzymes governs their anatomy and specificity are described. Theoretical enzyme kinetics are dealt with in considerable detail, together with the practical ways in which the various parameters can be measured. The minutiae of reaction mechanisms and the ways by which coenzymes and cofactors facilitate charge transfers are then discussed. The final chapter describes examples of catalysis by enzymes which are of special interest because their three-dimensional structure or allosteric nature have been elucidated, or the mechanism by which a coenzyme participates in the catalysis has been determined.

At the end of each chapter the author gives some key references and short descriptions of their scope. The diagrams are generally very clear and the formulae are well drawn. The editing is not perfect, and one has to use the index in conjunction with the list of section headings which are given at the beginning of the book.

M. MATTHEW

Biological Properties of the Mammalian Surface Membrane. Wistar Institute Symposium Monograph Number 8. Ed. by LIONEL A. MANSON. Pp. 160. Wistar Institute Press, Philadelphia, 1968. Price $5.

The first part of this symposium was devoted to new methods for isolating and determining the composition of cell membranes, including enzymes. L. Warren and Mary Glick presented some interesting observations suggesting that membrane synthesis takes place all the time; in growing cells new membrane is formed, in non-growing cells there is turnover of membrane constituents. Renewal of sialic acid-terminating receptors was discussed by P. I. Marcus and Vera Schwartz. L. C. McLaren and his colleagues described the isolation and properties of enterovirus receptors and K. Hummeler the role of cell membranes in the development of herpes virus. Laura Shen and V. Ginsburg discussed the composition of sugars released from HeLa cells by trypsin, using an isotope dilution technique; they suggest that the polysaccharides of cell surfaces function as recognition sites.

Of direct interest to immunologists are papers by L. A. Manson and his colleagues on the H-2-alloantigen content of surface membrane of mouse cells and by R. F. Barth and his colleagues on the phenotypic expression of histocompatibility antigens on cell surfaces by means of the mixed haemadsorption reaction. These and other problems are dealt with in a fully reported discussion. The symposium provides useful guidance to some of the main current trends in research on membranes.

A. C. ALLISON

The Pharmacology of Inflammation. By W. G. SPECTOR and D. A. WILLOUGHBY. Pp. 123. English University Press, London, 1968. Price 40s.

With a large literature, rapidly becoming larger, and a multi-discipline approach, the subject of inflammation is not likely to be well catered for in any standard text. This relatively small volume is therefore to be welcomed. It is, in a volume of 118 pages, not surprising that aspects of the subject on which the authors themselves have worked should

obtain more space than others, of at least equal importance. An example of this is only a short reference to complement.

The subject of endogenous mediators is comprehensively discussed, and the treatment of the controversial role of histamine is well set out, as are the interesting inhibition studies. Similarly, the chapter on anti-inflammatory drugs and the kinin system is a useful bringing-together of data. The chapter on mediators of delayed hypersensitivity reactions reviews the authors' work on lymph node permeability factors. The subject of leucocyte exudation is dealt with in a separate chapter, rightly emphasizing the separate nature of this process from that of vascular permeability.

From the point of view of disease the most challenging aspect is chronic inflammation. The time when information on its pharmacology can be summarized still seems distant.

G. Loewi

Progress in Experimental Tumor Research. Vol. 10. Ed. by F. Homburger. Pp. 293. Karger AG, Basel, 1968. Price 180s.

One of the difficulties which faces anyone who edits an annual series entitled *Progress in XYZ* is what to insert in a current volume if there has not been much progress since the last issue. In these circumstances, it is difficult to avoid producing a dull volume. Of the seven chapters in Volume 10, there are three which may halt the immunologist's finger as he flicks through. The first is a review by M. Friedman, G. Moldovanu, A. E. Moore and D. G. Miller on the transplantation of tumours in higher animals. Since little of real conceptual interest has emerged from studies on tumours of dogs, cats and other species mentioned in the review, this chapter will appeal to few.

There is a review on lymphoid tumours in amphibia by M. Balls and L. N. Ruben which includes a brief discussion on the capacity of amphibia to mount immune responses. However, the chapter most likely to attract immunologists is 'Immunotherapy of Cancer: Experiments with Primary and Syngeneic Tumour Grafts' by P. Alexander. After reviewing the earlier and well-known evidence on tumour specific antigens, Professor Alexander describes his own work in which tumour growth is inhibited by injections of allogeneic, and heterospecific lymphoid cells, or by extracts of RNA. While many readers will demand more evidence before being able to accept some of Alexander's conclusions, the chapter describes work of great interest. It is probable that this is the only chapter in the volume which readers of Immunology will want to study with care.

J. R. Batchelor

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The Biology of Animal Viruses. By Frank Fenner. Vol. I, *Molecular and Cellular Biology*; Vol. II, *The Pathogenesis and Ecology of Viral Infections.* Academic Press, New York, 1968. Price £8 12s. 8d.

This monumental work is a critical and comprehensive review of the broader principles of animal virology and, in a sense, is a successor to Burnet's *Principles of Virology.* No attempt is made to include descriptions of all viruses but rather, in each section, one or a few viruses are chosen as examples to illustrate principles. Any infectious process is the result of interactions of parasite and host and nowhere is this better seen than in the case of viral infections. These two volumes consider both sides of this relationship, at the levels of the individual cell, of the whole organism and of a population of individuals.